



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,242	12/22/2004	Yasushi Akiyama	2002JP311	2936
26289	7590	07/18/2006	EXAMINER	
AZ ELECTRONIC MATERIALS USA CORP. ATTENTION: INDUSTRIAL PROPERTY DEPT. 70 MEISTER AVENUE SOMERVILLE, NJ 08876			WU, IVES J	
			ART UNIT	PAPER NUMBER
			1724	

DATE MAILED: 07/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/519,242	AKIYAMA ET AL.	
	Examiner	Art Unit	
	Ives Wu	1724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1724

DETAILED ACTION

(1). Applicants' Request-for-Continued Examination (RCE), Amendments and Remarks filed on June 12, 2006 have been received and acknowledged.

Claims 1 and 2 are amended. New ground rejections for claims 1-11 are presented herein.

Claim Objections

Claim 6 is objected to because of the following informalities: In claim 6, it recites: "f necessary", it would be proper to cite "if necessary". Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

(2). **Claims 1-11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Toshisuke et al (JP 11-124531) in view of Mineo et al (JP 08-044066).

(3). As to the fluorine-containing polymer comprising a polymer unit represented in general formula (1) in an anti-reflective coating composition in **independent claim 1**, Toshisuke et al disclose a composition suitable for antireflective film on a photoresist surface containing a polymerization unit represented by $-\text{CF}_2\text{CF}(\text{OR}_f\text{COOM})-$ where R_f to be a linear or branched

Art Unit: 1724

perfluoroalkylene which may contain an ether oxygen; COOM includes -COOH , -COOY ; Y to be non-substituted or substituted ammonium ion (Abstract – Solution).

As to an amine in an anti-reflective coating composition in **independent claim 1**, Toshisuke et al disclose the -COOH.Z ; Z - an amine (Abstract – Solution).

As to an aqueous solvent capable of dissolving these components in an anti-reflective coating composition in **independent claim 1**, Toshisuke et al disclose the coating composition usually dissolving components into a solvent. As a solvent, the mixed solvent of water, an organic solvent, or water and an organic solvent can be used ([0020], line 1-3).

As to the acid in an anti-reflective coating composition in **independent claim 1**, Toshisuke et al **teach** as a desirable example of a solvent, the mixed solvent of water and alcohols, such as methanol, ethanol, isopropanol, 2, 2, 3 and 3-pentafluoro propanol being mentioned ([0021]).

Toshisuke et al **do not teach** an acid in the composition.

However, Mineo et al (JP 08-044066) **teach** water used for constituent as a solvent, and mixed water and organic solvent such as low-grade alkyl carboxylic acids such as acetic acid, lower alcohol such as methanol, ethanol and propanol maybe used ([0022]).

In view of functionally equivalent organic solvents such as alcohols, acetic acid used in the mixture with water disclosed by Mineo et al, it would have been obvious at time the invention was made to replace the alcohol for the mixture with water taught by Toshisuke et al with low-grade alkyl carboxylic acid such as acetic acid taught by Mineo et al for the solvent in the coating composition of Toshisuke et al based on their interchangeability as recognized functional equivalence as organic solvent for the mixture with water.

As to the coating composition having pH ranging from about 1.0 to about 6.0 in **independent claim 1**, in view of substantially identical coating composition disclosed by Toshisuke et al with Mineo et al, and by applicants, it is examiner's position to believe that the coating composition of prior arts would inherently possess the pH ranging from 1.0 – about 6.0 as claimed. Since USPTO does not have proper means to perform the measurements, the burden now is shifted to applicants to prove otherwise. *In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977).

As to limitation of **claim 2**, Toshisuke et al disclose 2nd polymerization unit represented by –CF₂CFX- (Abstract, Solution).

As to limitation of **claim 3**, Mineo et al disclose low-grade alkyl carboxylic acids such as acetic acid ([0022], line 1-5).

As to limitation of **claim 4**, Toshisuke et al disclose alkanolamines, such as ethanolamine, alkylamine such as ethylamine, propylamine and diethylamine ([0015]).

As to limitation of **claim 5**, Toshisuke et al disclose water as a solvent ([0020]).

As to limitation of **claim 6**, Toshisuke et al the coating constituent which can be form the antireflection film which has a low refractive index suitable as antireflection film on the front face of a photoresist layer, and can be especially removed thoroughly with a developer at the time of photoresist development. By using this constituent, it contributes to high yield of a pattern formation process ([0044]).

As to the limitations of **claims 7-11**, in view of substantially identical coating composition disclosed by Toshisuke et al with Mineo et al, and by applicants, it is examiner's position to believe that the coating composition of prior arts would inherently possess the pH ranges as claimed. Since USPTO does not have proper means to perform the measurements, the burden now is shifted to applicants to prove otherwise. *In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977).

Response to Arguments

Applicant's arguments with respect to claims 1-11 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ives Wu whose telephone number is 571-272-4245. The examiner can normally be reached on 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1724

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Examiner: Ives Wu

Art Unit: 1724

Date: July 10, 2006

DUANE SMITH
PRIMARY EXAMINER

D. A.
7-11-06